

Rita, Rice and Salt Water: An Overview of the Aftermath of Hurricane Rita in the Southwest Louisiana Rice and Sugarcane Growing Area

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Hurricane Rita Storm Surge



An aerial photograph showing a vast expanse of rice fields. The fields are divided into numerous rectangular plots, some of which are flooded with water, reflecting the sky. The overall color palette is dominated by shades of green, brown, and blue. In the distance, some small structures and trees are visible, suggesting a rural or agricultural setting. The perspective is from a high altitude, looking across the landscape.

Looking west to east in fly over of
rice fields 9 28 05



Vermilion parish 9 28 05



Forked Island 9 28 05

Debris line in trees 10 11 05



Vermilion parish 10 5 05



**Sprouted rice in grain
bins, Vermilion parish
10 5 05**

**Removing spoiled rice
from grain bins
Vermilion parish 10 5 05**

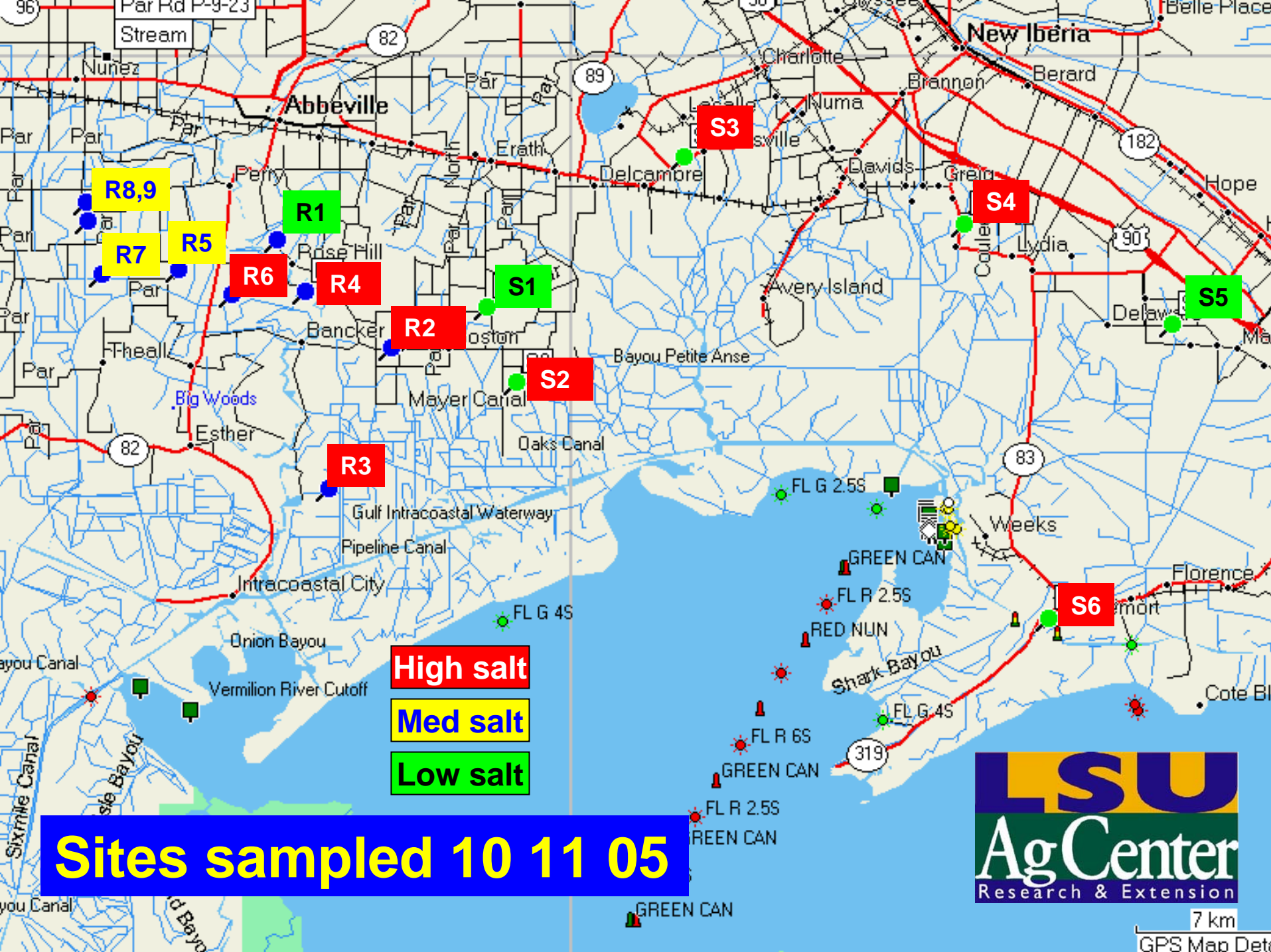




Calcasieu parish 10 12 05



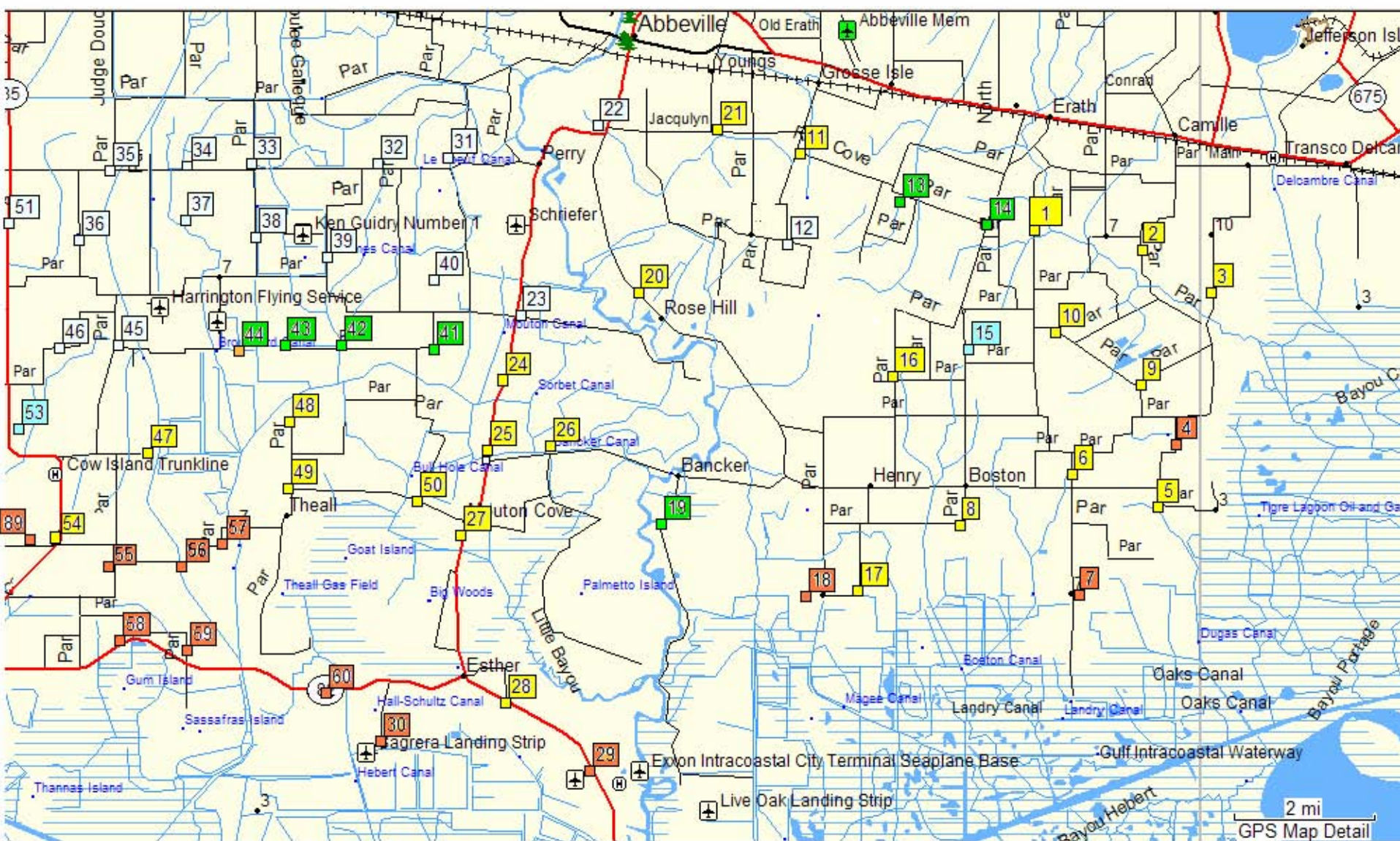
Vermilion parish 10 11 05



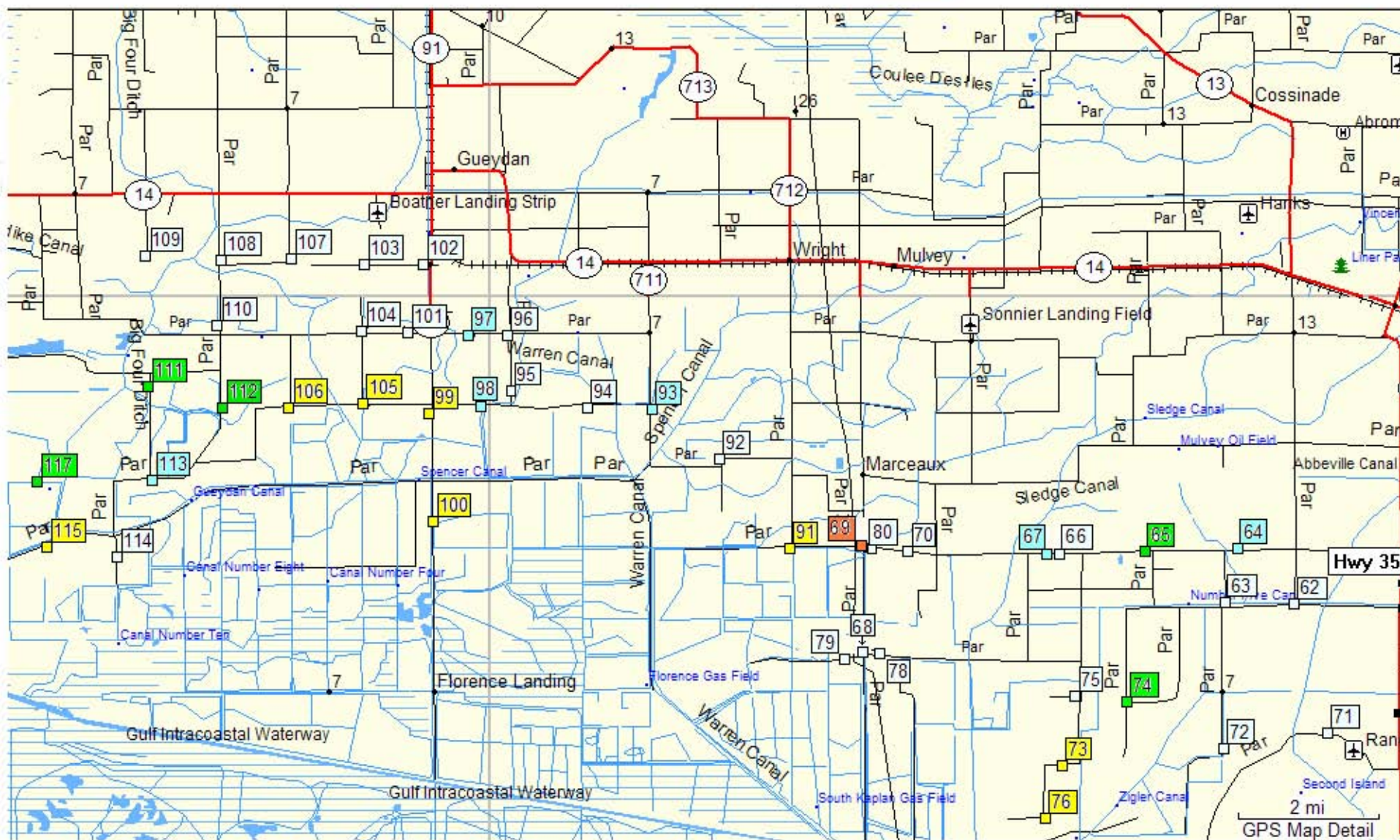
Proposed Ranking Rules of Salt Effects on Rice Production

Rank	Description	Salts (ppm)	SAR	Effects
1	None	<500	<4	No effect on yield
2	Mild	500-1000	<5	Little to no effect on yields
3	Moderate	1000-2000	<6	Some yield reduction possible
4	Severe	2000-6000	6-15	Substantial yield reduction
5	V. Severe	>6000	>15	Catastrophic failure

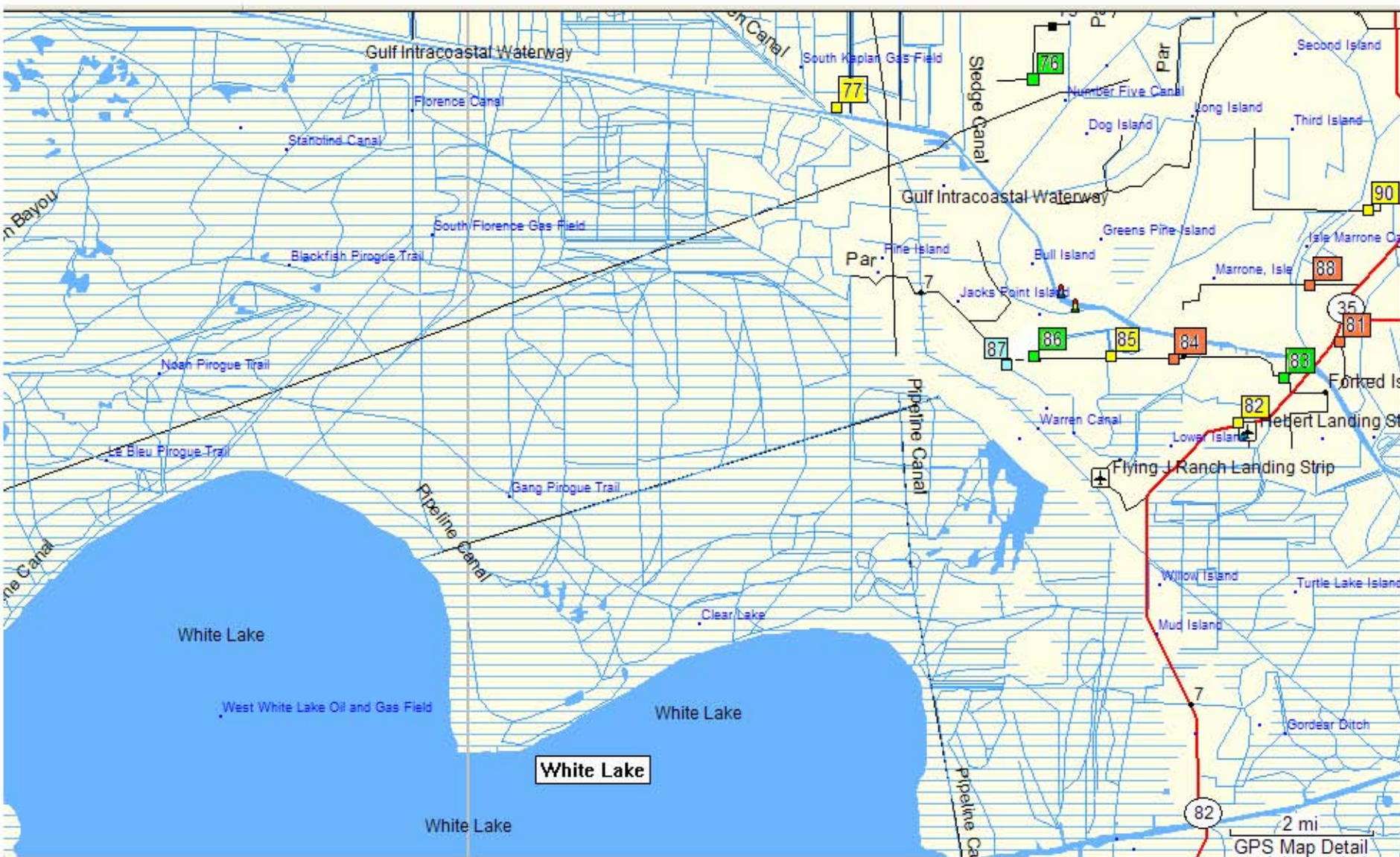
Class	Salts ppm	SAR	
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Mild	500-1000	or	<4
Moderate	1000-2000	or	<6
Severe	2000-6000	or	<15
Very Severe	>6000	or	>15



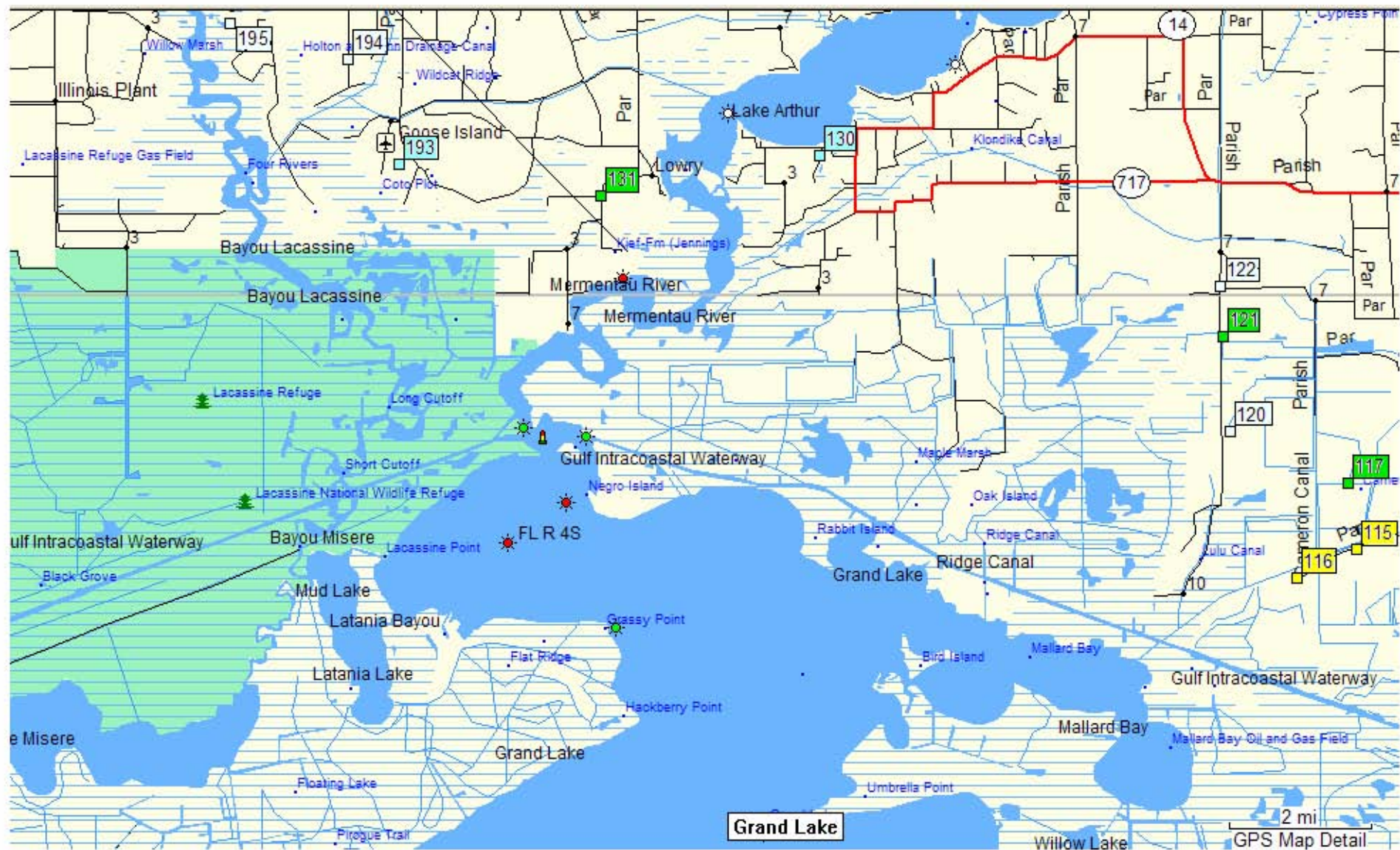
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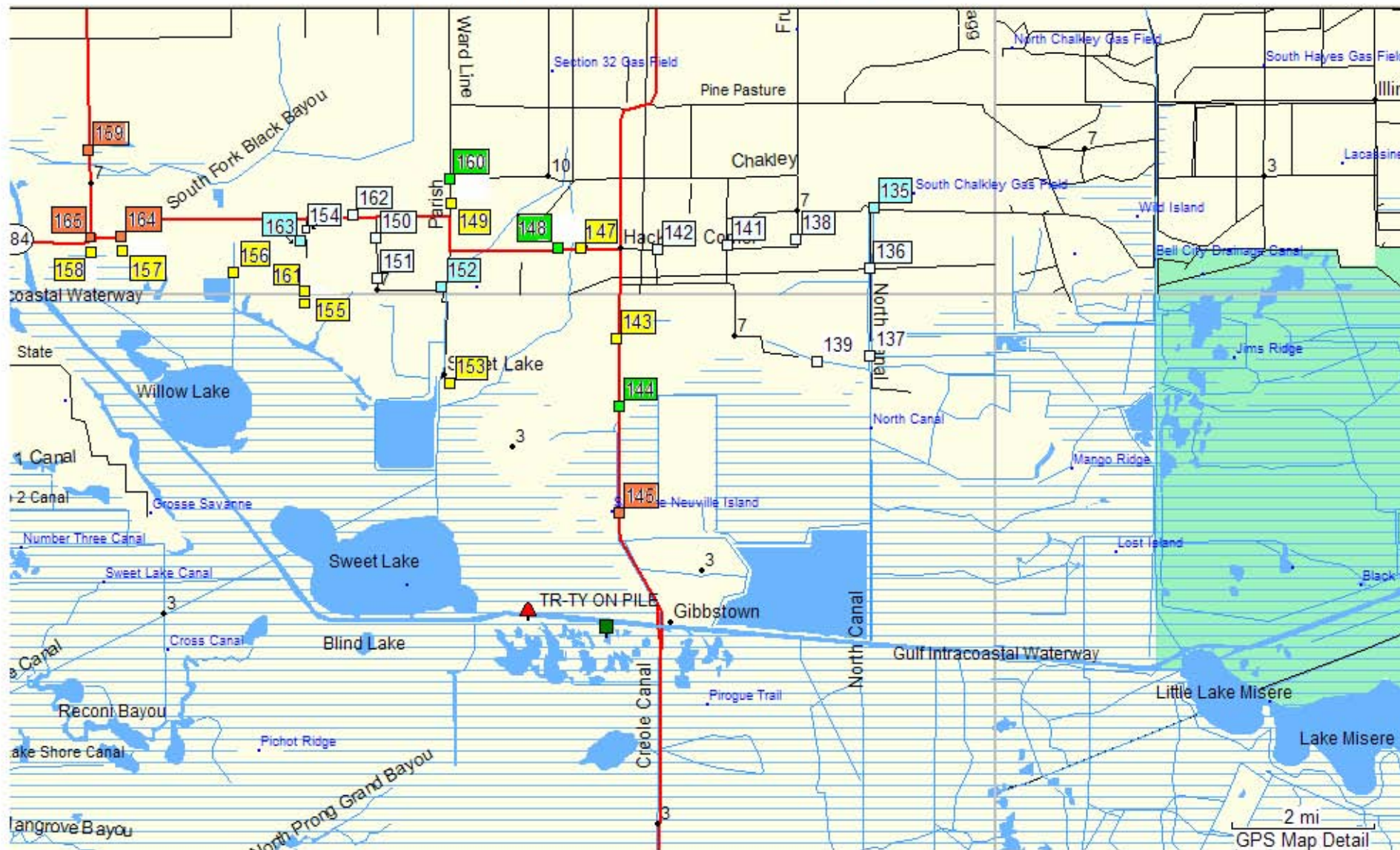
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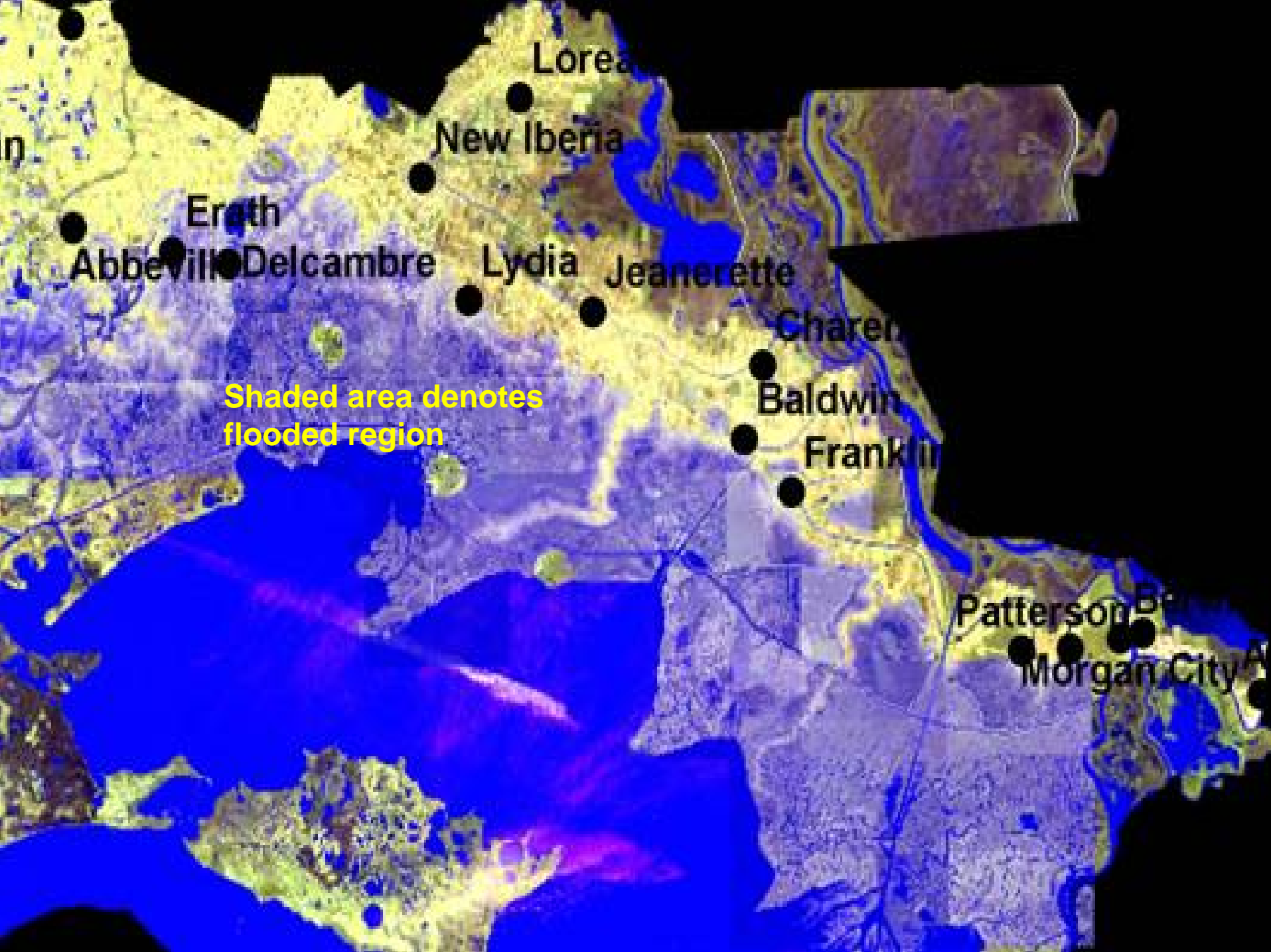
Distribution of Sampled Sites Based on Sampling Depth and Anticipated Effects of Salt

Rank	Description	0-3"	3-6"	6-12"	0-6"	0-12"
1	None	31%	41%	47%	35%	41%
2	Mild	11%	20%	19%	19%	15%
3	Moderate	7%	13%	16%	10%	16%
4	Severe	32%	23%	15%	30%	25%
5	V. Severe	17%	3%	3%	6%	3%

Potential Salinity Problems for Sugarcane

- ***Soil sampling found from 268 to >6,000 ppm of salt in the surface 3 inches where sugarcane fields were exposed to flood waters of Hurricanes Katrina and Rita***
- ***Approximately 40,000 acres of sugarcane area flooded with water containing salt***
- ***Sugarcane is moderately sensitive to salt with a threshold for yield reduction of approximately 1,100 ppm***
- ***Saltiest areas were just north of Hwy 14 and at Burns Point***
- ***Salt content higher in Vermilion Parish and became brackish more eastward***

(Viator et. al. 2006)



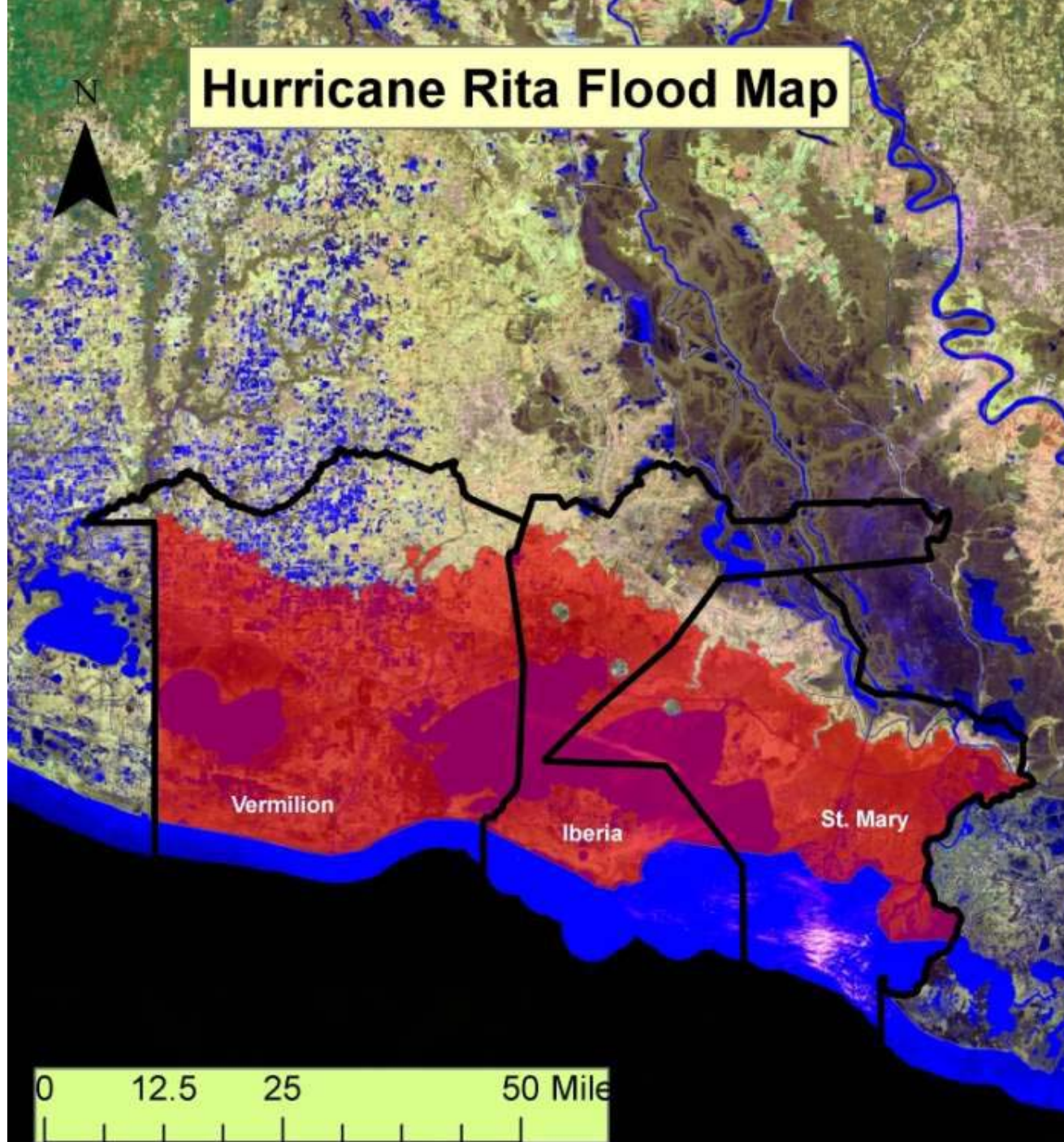
HWY 14
Delcambre

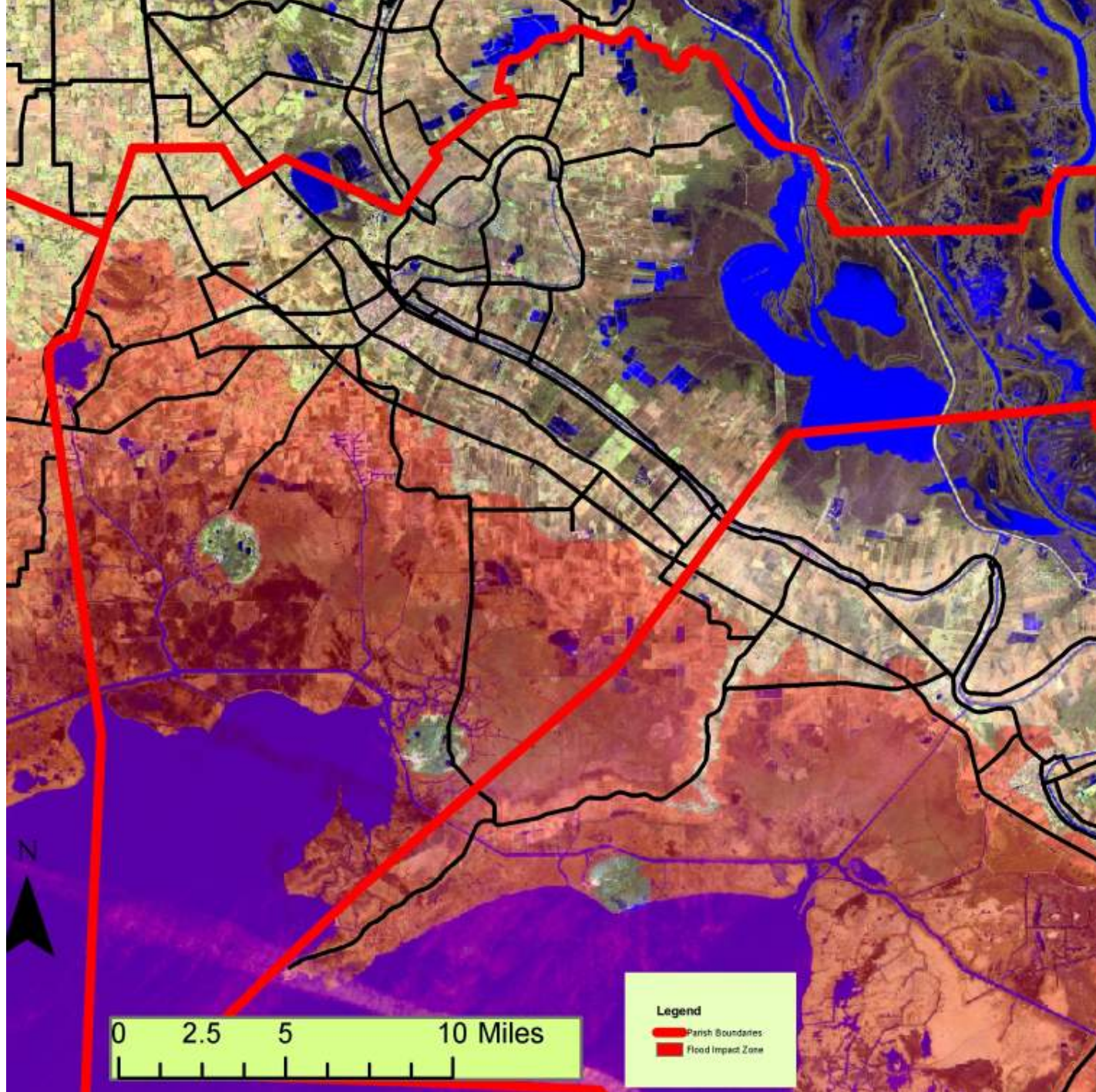


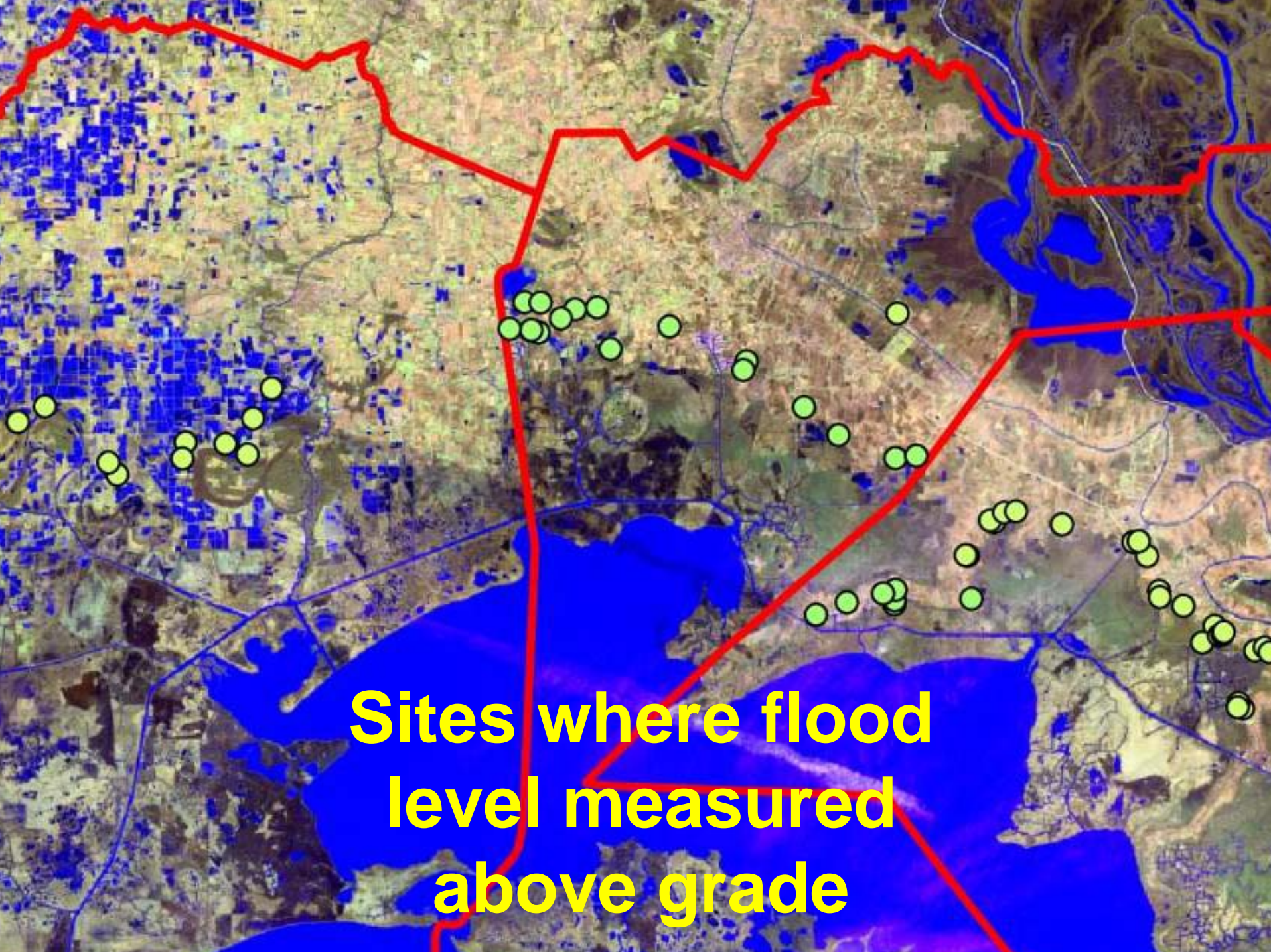


Delcambre

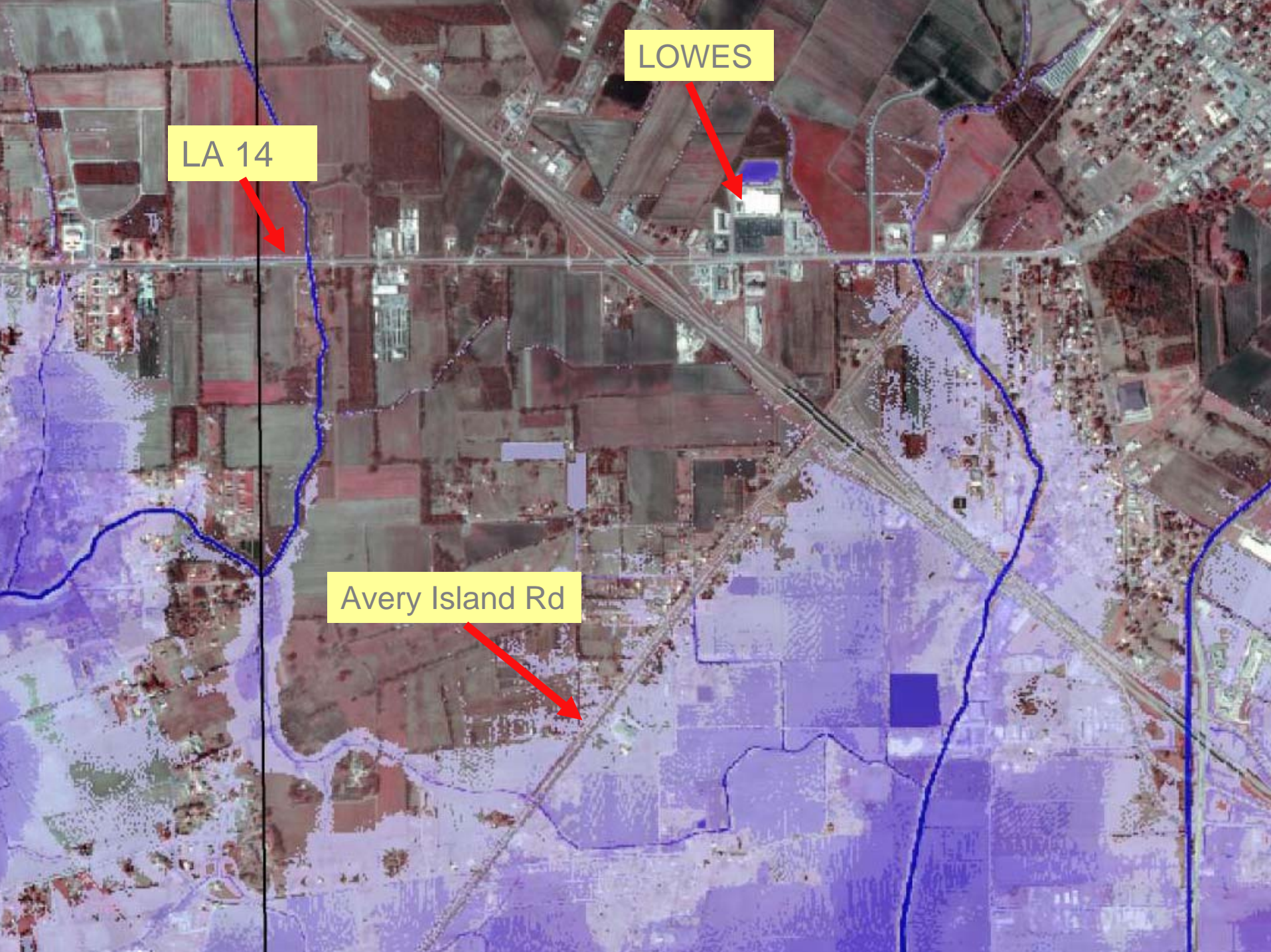
Hurricane Rita Flood Map







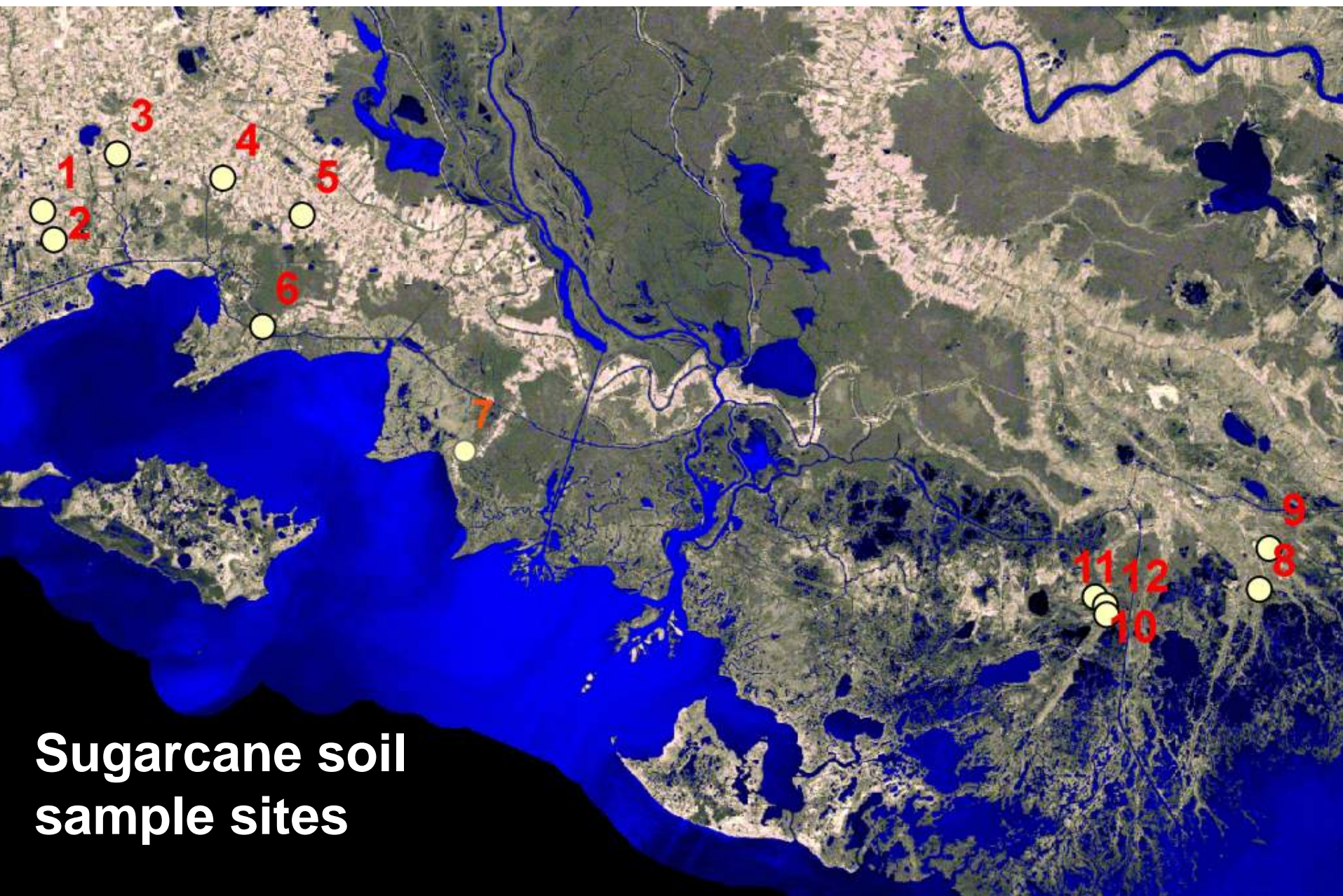
**Sites where flood
level measured
above grade**



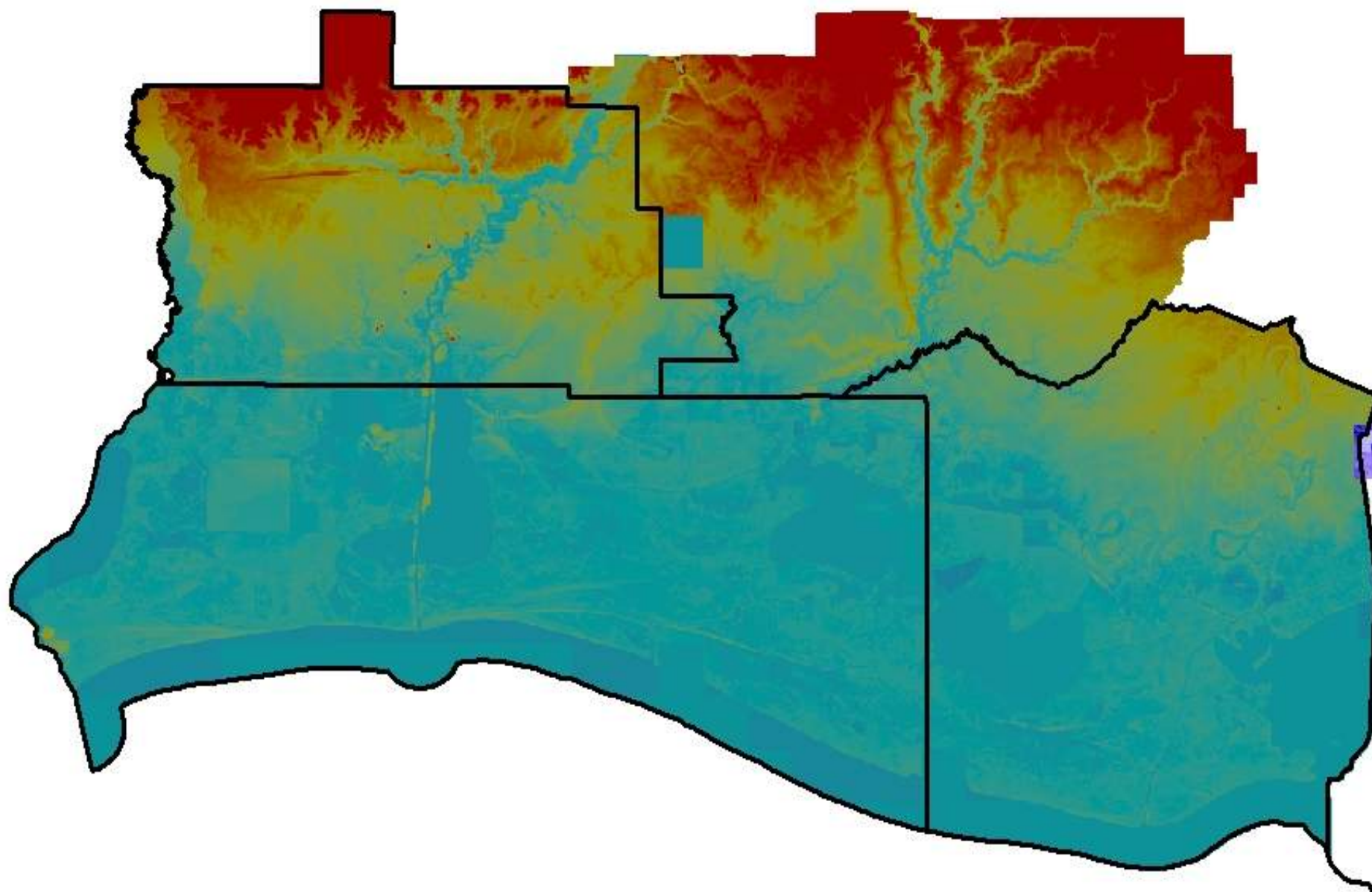
LA 14

LOWES

Avery Island Rd



**Sugarcane soil
sample sites**





R6
1-3

**High Salt, Intermittent
Dry-Wet**

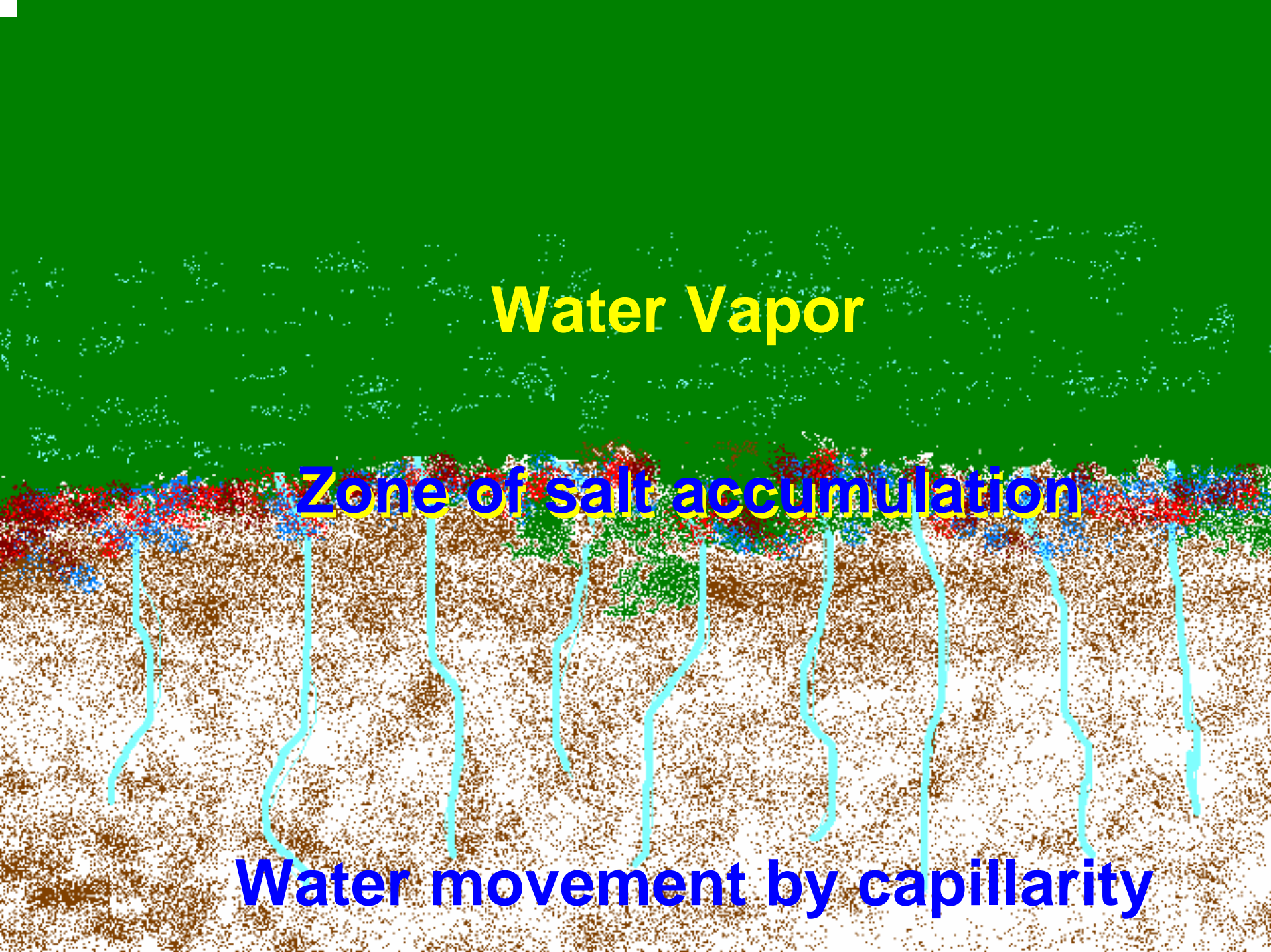


High Salt, Continuous Flood

Water Vapor

Zone of salt accumulation

Water movement by capillarity



Current Recommendations

- Do nothing
- Pray for rain
- Sample same areas to detect any changes

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